West End Farm Bill CE DRAFT Project Design Criteria

Design Feature Code	Criteria	Application
	ARCHEOLOGY	
ARCH-1	Mark heritage resource sites and avoid all marked sites during all ground-disturbing project activities. The heritage resources within or immediately adjacent to treatment units would be flagged (10-meter buffer applied).	Project wide
ARCH-2	Allow thinning within heritage site boundaries, provided: cutting is accomplished using hand tools only (no mastication, pile burning or ground disturbance within heritage site boundaries); no mechanized equipment or staging of equipment within site boundaries; large diameter trees are felled away from all features; and thinned material is hand carried outside the site boundary. Existing roads can be used for hauling or skidding within the site boundaries; however, no expansion of roads within the sites is to occur.	Project wide
ARCH-3	All new temporary roads will be routed away from buffered site boundaries. To minimize the potential effect of actions related to road maintenance, use, reopening, and closure during the project, the following protection measures must be followed. All ground disturbing activities such as vegetation removal, scarification, grading, and berming would be carried out within the existing road footprint.	Project wide
ARCH-4	If any staging or storage areas must be established outside the existing roadbed, these areas would be situated within existing heritage inventory areas and the action must be determined through consultation with the Forest, District, or Zone Archaeologist to have no effect on known historic properties. Depending on the context of these locations and the scale of the proposed work, an on-site archaeologist may also be required to monitor the work.	Project wide
ARCH-5	If any previously unidentified cultural resources are located during project implementation, ground-disturbing work will be halted in the vicinity until the resources are evaluated by the District or Zone archaeologist. If the cultural resources are determined to be potentially eligible for listing on the National Register of Historic Places work will either be permanently halted, or a mitigation plan will be developed in consultation with the Oregon SHPO before work continues. An Inadvertent Discovery Plan (IDP) has been developed for this project, staff and contractors will undergo training in the IDP prior to implementation.	Project wide
	BOTANY	
BOT-1	Populations of Forest Service designated sensitive plant species that are in, or near, areas with proposed ground disturbing activities shall be designated as “Special Management Areas” (SMAs). a. These sites shall be protected from all ground disturbances. Vehicle and equipment parking, log decking, yarding, slash piling and burning. Trees shall be directionally felled away from SMAs. Trees incidentally felled into an SMA shall be left in place. b. SMAs shall be clearly marked on sale maps, and on implementation planning maps. SMAs may be flagged on the ground prior to treatment. A	Where sensitive plants occur

	botanist may assist with unit layout in areas where the SMAs occur.	
BOT-2	If any new sensitive plant populations are located before, or during project implementation, the Forest Botanist shall be notified. The population will be evaluated, and the appropriate project design criteria shall be applied.	Project wide
BOT-3	Timber sale administrator and/or implementing staff shall notify botany staff when activities are scheduled to begin in areas where SMAs are designated.	Project wide
BOT-4	The following unique habitats shall be protected when possible from harvest activities: lithic soil areas or scabs (for identification of areas use 'Lithic Soils and Management Operations Guide' and SOIL-4 PDC), seeps, springs, wallows, and wetland areas (including seasonally wet meadows). Wetland and riparian areas shall be buffered in accordance with PACFISH RHCA Standards and Guidelines. Vehicle and equipment parking, log decking, yarding, slash piling and burning, and construction of fire lines shall not occur in these areas. If caves, cliff faces, or other unique habitats not listed above are encountered during recon or layout, their value to botany and wildlife would be evaluated, and appropriate protection, as determined by the Botany Department, would be provided.	Where unique habitats occur
BOT- 5	Actions conducted or authorized by written permit by the Forest Service that will operate outside the limits of the road prism (including public works and service contracts), require the cleaning of all heavy equipment (bulldozers, skidders, graders, backhoes, dump trucks, etc.) prior to entering National Forest System Lands.	Project wide
BOT- 6	Use weed-free straw and mulch for all projects, conducted or authorized by the Forest Service, on National Forest System Lands. If State certified straw and/or mulch is not available, individual Forests should require sources certified to be weed free using the North American Weed Free Forage Program standards, or a similar certification process.	Project wide
BOT- 7	Inspect active gravel, fill, sand stockpiles, quarry sites, and borrow material for invasive plants before use and transport. Treat or require treatment of infested sources before any use of pit material. Use only gravel, fill, sand, and rock that is judged to be weed free by District or Forest weed specialists.	Project wide
BOT-8	Conduct road blading, brushing and ditch cleaning in areas with high concentrations of invasive plants in consultation with District or Forest-level invasive plant specialists, incorporate invasive plant prevention practices as appropriate	Project wide
BOT-9	When it is deemed necessary to re-establish native vegetation, and to prevent non-native invasive species infestations, seeding and/or planting of native plants shall be implemented after ground disturbing activities. Areas that may need treatment include log decks, staging areas, landing zones, temporary roads, slash piles, skid trails, decommissioned roads, and any other disturbed site. All seed used for revegetation will be native seed provided by the Forest Service.	Project wide
	FUELS	
FUEL-1	Prescribed Burn Plans will meet the requirements of the Interagency Prescribed Fire Planning and Implementation Procedures Reference Guide.	

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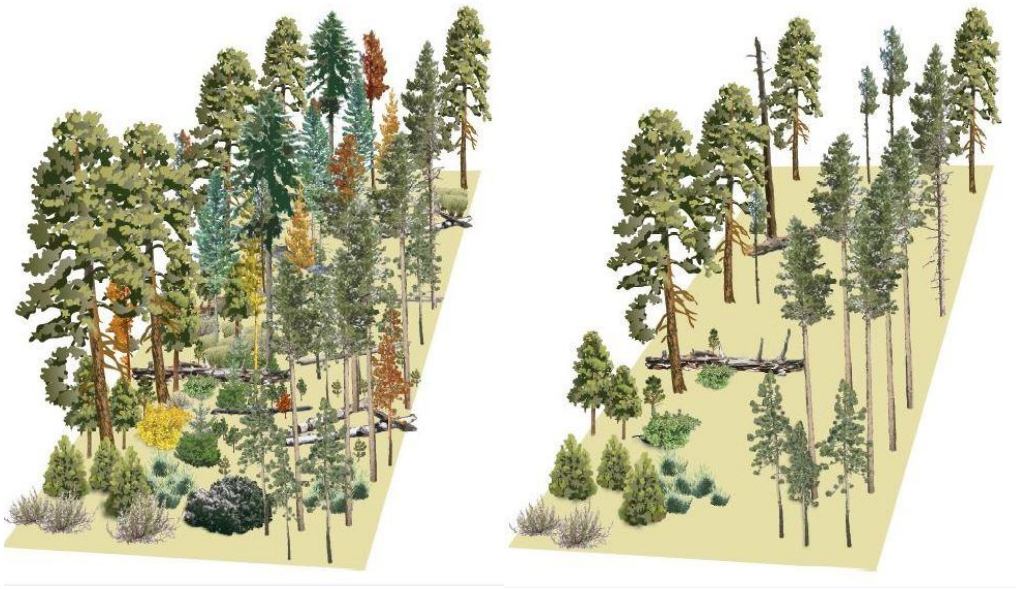
<tr><td>FUEL-2</td><td>In compliance with the Clean Air Act, burning of any kind will not occur unless the Oregon Department of Forestry grants prior approval.</td><td></td></tr>
<tr><td>FUEL-3</td><td>Burning shall be planned for times when the transport winds and mixing heights are sufficient to displace much of the smoke from the area.</td><td></td></tr>
<tr><td>FUEL-4</td><td>Any area where 10 sale and or operational trees per acre are cut will have all slash piled in accordance with contractual obligations to meet Forest Plan specification of less than 9 T/A in 0-3” fuels.</td><td></td></tr>
<tr><td>FUEL-5</td><td>Landing piles shall not be less than 6 feet wide by 6 feet high and not to exceed more than 15 feet high and 20 feet wide.</td><td></td></tr>
<tr><td>FUEL-6</td><td>Pile all slash located within the used landing area that is greater than 1 inch in diameter and 3 feet long. Any material protruding more than 6 feet from the perimeter of the pile will be cut off and placed in the pile.</td><td></td></tr>
<tr><td>FUEL-7</td><td>As is practical, all piles shall be free of dirt and the duff layer will not be disturbed during piling operations.</td><td></td></tr>
<tr><td>FUEL-8</td><td>Hand piles will be covered with 4-9 mil plastic or similar material to cover the top of the pile, uphill side and extending down each side to facilitate rapid ignition and complete combustion.</td><td></td></tr>
<tr><td>FUEL-9</td><td>Care should be taken to preserve fences and water developments within the project area. Use mitigations and prescribed burn timing to preserve these features.</td><td></td></tr>
<tr><td>FUEL-10</td><td>Piles will be located at least 25 feet from the drip line of live trees >21 DBH and/or exhibiting old growth characteristics (all species, including large old juniper) and snags (greater than 10 inches DBH). Locate piles away from downed wood (greater than 12 inches DBH). Pull back slash from and do not place piles near archeological sites.</td><td></td></tr>
<tr><td>FUEL-11</td><td>Burn piled material under conditions that reduce the likelihood of scorch on residual trees. This may include scratch lining, raking litter and duff, or pulling harvest-created slash away from these habitat features.</td><td></td></tr>
<tr><td>FUEL-12</td><td>Conduct pile burning in a manner that encourages efficient burning to minimize soil and smoke impacts while achieving treatment objectives.</td><td></td></tr>
<tr><td>FUEL-13</td><td>The Forest Service will take steps to notify adjacent landowners in advance of planned burn operations</td><td></td></tr>
<tr><td>FUEL-14</td><td>Piles will avoid special protected areas identified by other resources, including roads, botany, archeology, etc.</td><td></td></tr>
<tr><td>FUEL-15</td><td>Leave trees will be pruned to a height of 6 ft with machinery. In trees 12 feet or less, prune to not more than half the crown. When hand pruning with chainsaws, branches will be removed no higher than eye level.</td><td>Fuel Breaks</td></tr>
<tr><td></td><td>HYDROLOGY/FISH</td><td></td></tr>
<tr><td>WQ- 1</td><td>Install water bars on temporary roads, and skid trails with spacing indicated in the table. Locations will be evaluated post-harvest. Water-bars be cut at an angle of 30-40 degrees and depth of 12-18 inches.
<table>
<tr><th>Gradient</th><th>Spacing</th></tr>
<tr><td>< 5 %</td><td>200 ft</td></tr>
<tr><td>5-10 %</td><td>150 ft</td></tr>
<tr><td>10-20 %</td><td>100 ft</td></tr>
<tr><td>21–40 %</td><td>50 ft</td></tr>
<tr><td>> 40%</td><td>25 ft</td></tr>
</table>
</td><td>Project wide</td></tr>
</table>

WQ-2	Landings, equipment staging, parking, and refueling will be outside of RHCAs and in areas designated by the sale administrator. Avoid landings on steep slopes, highly erodible soil, or other sensitive areas. Use existing landings where possible. Restore and stabilize landings after use.	
WQ-3	Erosion control and sediment measures will be implemented on disturbed areas; these include skid trails, roads, landings, temporary road fills, water source sites, borrow sites, or other areas disturbed during mechanical vegetation treatments. Install and maintain erosion control (e.g. functionally sized and place water bars) on skid trails prior to spring runoff.	
WQ-4	Install sediment and storm water controls prior to soils disturbing activities (e.g. culvert installation, road maintenance).	
WQ-5	There will be no equipment crossings of live water (PACFISH Categories 1 and 2), springs, or wetlands (PACFISH Category 3 and springs and wetlands in Category 4). Equipment crossings of intermittent stream RHCAs (streams in PACFISH Category 4) would be minimized, with a minimum spacing of 100 feet between crossings. Crossings would have enough slash and logs to fill the channel with material and at least five feet over the shoulders of the stream banks on each side. Logs would be removed from the channel and slash would be left at the end of operations. Crossings will be perpendicular to the stream channel and will be located at low points in the bank. No crossings will occur during runoff or while there is water in the channel. All crossings will be located and approved by the sale administrator and, whenever available, hydrologist or fish biologist before use. Equipment crossing ephemeral draws and unchanneled swales will be confined to designated locations, with a minimum spacing of 100 feet between crossings. Skidding up and down ephemeral draws will be prohibited. Debris may be placed into the crossings to reduce soil disturbance, compaction, and erosion. However, the debris must be removed before the unit is closed out. There will be no crossing of ephemeral draws and unchanneled swales during runoff. Measures to minimize or mitigate ground disturbance will be taken (e.g. travel on slash mats, establish 45% effective ground cover after use). All crossings will be located and approved by the sale administrator and hydrologist or fish biologist before use.	
WQ-6	Use suitable measures (water bars, culverts, etc.) to disperse concentrated flows of water from road surface drainage features to avoid or minimize erosion and sediment transport to waterbodies.	
WQ-7	Temporary roads will be inspected to verify that erosion and stormwater controls are implemented and functioning and are appropriately maintained. Design roads and skid trail approaches to minimize overland flow entering the landing.	
WQ-8	Ensure culverts do not become plugged from logging activities.	
WQ-9	Minimize road and ditch blading, unless needed to maintain ditch	

	functionality.	
WQ-10	Re-opened closed roads and temporary road entrances will be closed and/or physically blocked so that unauthorized motorized vehicles cannot access the road after project implementation. No temporary roads in RHCAs.	
WQ-11	Existing native surface or gravel roads crossing perennial streams will be monitored during haul by the sale administrator and rocked as needed to maintain a durable surface and minimize potential for sediment transport.	
WQ-12	Operations should not be done during runoff, storm events, or snow melt to minimize the amount of sediment flowing into stream crossing.	
WQ-13	All temporary roads will be obliterated after use. Any infrastructure such as culverts should be removed and recontoured as necessary. Decompaction techniques may include subsoiling, utilizing excavator bucket teeth to loosen compacted soils, and recontouring cuts and fills to the extent possible. All bare soil should be treated to establish effective ground cover to the extent possible, including seeding, and/or placing fine slash or other organic materials over bare soil surfaces.	
WQ-14	Avoid cable yarding over streams, ponds, springs, and wetlands when possible. Full suspension is required over these features.	
	RECREATION	
REC-1	Trails will not be used for skidding, except for where ATV trails use old roadbeds. If crossings are necessary, they will be perpendicular to the system trail and obliterated upon completion of use (e.g. earthen barriers, placement of slash material, etc.). On trails that allow motorized use, such methods will be designed to prevent motorized use off the designated trail. Any damage to the trail tread will be repaired and debris removed.	Project wide
REC-2	Any repair or obliteration of roadbeds that also serve as designated OHV trails will retain a 50-inch wide tread that meets OHV standards.	Project wide
REC-3	Where possible, avoid placement of landings or skid trails on dispersed campsites. If the best location from a resource protection standpoint is a dispersed camp, remove logging debris (by burning or other), level any ruts, and plant native seed upon completion of activities.	Project wide
REC-4	Hauling on arterial and collector roads should be managed to reduce risk of traffic collisions during holiday weekends (Memorial Day, July 4, and Labor Day) and the main hunting seasons (intermittent from August through mid-November). This may be done in several ways (signage, posting alternate routes, avoidance of hauling during those times, etc.).as determined by the District Ranger. Warning or informational signs will be placed as appropriate along major travel routes during project operations (thinning, harvest, prescribed fire, etc.) to alert and inform the public. Current information will be posted on associated portal entry kiosks. Trails will be signed 300 feet in advance of an active unit to warn visitors of potential hazards due to activities	Project wide
	RANGE	
LIV-1	Hand thinning units should avoid leaving long and sharp pointed stumps greater than 2” in length that could injure or cripple animals.	
LIV-2	Protect range developments (fences and water developments) from falling	

	trees	
LIV-3	Avoid damaging cattle guards on haul routes with equipment. Do not blade soil/gravel into guards	
LIV-4	Closing gates during project implementation phase to assist livestock management goals for Term Grazing Permit Administration (Range Management Specialist and Permittee)	
	SOILS	
SOIL-1	Retain as much fine and coarse woody material as possible while meeting fuel reduction objectives to control erosion and provide nutrient cycling.	Project wide
SOIL-2	Pile fuels (both hand and machine piles) on sites already disturbed by logging activities (old skid trails and landings). Refrain from fuel piling above or below culverts or in drainages. Limit pile size to less than a normal landing area. For pile burning, maintain less than 15 percent or less soil exposure on slopes greater than 35%.	Project wide
SOIL-3	Design and locate skid trails and skidding operations to minimize soil disturbance. a) Designate skid trails to limit site disturbance. (> 100ft spacing with regular ground-based operations >50 feet with activities over slash in trails). b) Locate skid trails to avoid concentrating runoff and provide breaks in grade. c) Use Soil Moisture vs. Texture Operability document to avoid detrimental soil conditions during seasons when moisture will affect soil stability.	Project wide
SOIL-4	Limit operating on shallow soils for driving, skidding, and landing use unless over snow of 18 inches or more. If use is necessary, disturbance will be kept to edges of these features. A botanist or soil scientist will be consulted if ground activities are necessary. Restorative actions, such as scarifying, seeding, mulching and/or adding nutrients, such as biochar would be used to improve soil productivity if project activity occurs. Use Lithic Soil and Managing Operations Guide for assistance in identifying shallow soils in the field.	Project wide
SOIL-5	Operate ground-based equipment when soil conditions are dry, frozen, or snow covered. If possible, operate on a bed of slash (8 to 12-inch-thick or more) to mitigate soil compaction and displacement on all soils. When slash mat availability is less than 12 inches dry soil conditions are required. Dry soil conditions are when surface horizons between 2 to 6 inches of the soil surface are dry. Refer to Soil Moisture vs. Texture Operability guide. Recommendations for machine operation during winter activities include: 6 inches of frozen ground, 3 inches of frozen ground with 10 inches of settled snow; 18 inches or more of snow; 10 inches of slash mat in combination with 14 inches of settled snow; or moisture conditions acceptable for minimizing rutting or puddling of soils. Failure indicators of cold weather condition include: machine break-through begins to occur; equipment tracks sink half the width of the track below the soil surface with one or two passes; ruts greater than 15 cm deep	Project wide

	form in the soil; mid-day temperatures rise above freezing; surface melt occurs over existing frozen surfaces.	
SOIL-6	Use of ground-based skidding or forwarding equipment on slopes exceeding 35% should be limited to short pitches on mountain backslopes. Where slopes are greater than 35%, single passes with felling equipment are acceptable. It would be preferable if singles passes could be done over slash, but it is not required. If additional passes are necessary, they must be done over a minimum of 8 inches of slash.	Project wide
SOIL-7	Utilize low ground pressure equipment and existing trail system and landings as much as possible. To limit detrimental soil disturbance within commercial harvest units, low ground pressure equipment (less than 8.5 pounds per square inch [psi]) can be allowed off trails on dry, snow-covered, or frozen soil conditions. All other heavy equipment should remain on trails and roads. Mechanical thinning equipment in non-commercial thinning units may be used if equipment exceeding 7 PSI does not travel over the same pass more than once. It is recommended that all mechanical thinning equipment travel over slash. If signs of compaction or displacement are present from vehicles with 7 PSI tires these areas should be subsoiled.	Project wide
SOIL-8	Temporary road placement should keep to deep soils, greater than 20 inches, as much as possible allowing for subsoiling equipment to be used to restore hydrologic function to the profile.	Project wide
SOIL-9	Use existing roads, skid trails, and landings as much as possible. Existing landings should be subsoiled or scarified and seeded after use. All new landings should be subsoiled and seeded after harvest activities are complete. Existing skid trails that are used for West End harvest purposes should be subsoiled when ruts exceed 6 inches and receive scattered woody debris. New skid trails should be subsoiled when viewable from roads or recreation areas and receive scattered woody debris. If seed is not readily available on forest, woody debris scattered over the area is acceptable. Refer to Subsoiling Prescription guide included as an additional document to this report.	Project wide
	Wildlife	
WL-01	No cutting of snags ≥ 21 inches DBH unless they are classified as hazard or danger trees per FS policy. Snag standards for all diameters and desired levels would be met in the project area following treatment activities.	
WL-02	Leave all hollow or partially hollow, broken-top snags greater than 15 inches DBH to provide roost habitat for bats unless they need to be removed to meet purpose and need or if they are classified as hazard or danger trees per FS policy. Dead grand fir most commonly provides hollow tree habitat.	
WL-03	If cliffs, talus, or cave habitat is found, protection measures will be determined by the District Wildlife Biologist.	

WL-04	Maintain wildlife habitat diversity and complexity by implementing a "gappy, patchy, clumpy" approach while still meeting the purpose and need of the project. Maintain features like snags, legacy trees, openings, patches (½ to 1 acre in size at the rate of 1 acre for every 30 acres thinned), piles, shrubs, and logs where possible and in a configuration that meets purpose and need (see figures below for example). Pre-treatment Post treatment 	
WL-05	Protect goshawk nests from disturbance if any are located during project activities. Maintain the most suitable nesting habitat on 30 acres around nest sites. Retain late and old structure forest in a 400-acre post-fledging area (PFA) as determined by the District Wildlife Biologist. Defer activities in active PFAs from April through August.	
WL-06	Protect known or discovered raptor nest sites from management and human disturbances until fledging has been completed. Level of protection will vary by species and will be recommended by the District Wildlife Biologist.	
WL-07	Where possible, retain trees with inactive raptor nests that may be important to secondary nesters (e.g. Great Gray Owl).	
WL-08	Protect known denning, nesting, or roosting sites of threatened, endangered, and sensitive species. Level of protection will vary by species and will be recommended by the District Wildlife Biologist.	